

## **IMPACT OF ORGANIZATIONAL SUPPORT AND TECHNOLOGY COMPETENCE IN E-COMMERCE ADOPTION ON SMEs PERFORMANCE IN JABODETABEK REGION**

**Ratnaningsih Hidayati, Ririh Kusuma Permatasari and Ashry Noviana Fajry**

Center for Trade Education and Training  
Ministry of Trade Republic of Indonesia  
Depok Indonesia

[nanasoffan@gmail.com](mailto:nanasoffan@gmail.com), [ririhkusuma.pepi@gmail.com](mailto:ririhkusuma.pepi@gmail.com), [ashrynov@gmail.com](mailto:ashrynov@gmail.com)

**ABSTRACT** : E-commerce has changed the ways of doing business in many business sectors, including Small Medium Enterprises (SMEs) sector. However, SMEs encountered varied challenges in adopting e-commerce to their business. This research analyzed organizational support and technology competence in e-commerce adoption on SMEs performance in Indonesia, specifically in Jabodetabek region. A quantitative approach was applied in this study, with a Likert-scale questionnaire as a tool to determine the impact of internal factor regarding e-commerce adoption on the SMEs performance. An ordinary linear regression analysis was conducted to test the hypothesis. The results showed that the variables of organizational support and technology competence simultaneously affect the performance improvement on e-Commerce adoption by SMEs in Jabodetabek region.

*Keywords: organizational support, technology competence, e-commerce adoption, performance, SMEs*

### **Introduction**

There is no doubt that the existence of small and medium enterprises (SMEs) in developing countries is essential. This sector plays pivotal roles not only to enhance the gross domestic product (GDP), but also to absorb human resources (World Bank, 2019). The number of SMEs in Indonesia is 98.7% from the total number of industry in Indonesia (Statistics Indonesia, 2016). In line with that, the number of human resources absorbed by SMEs sector is 75.3 % (Statistics Indonesia, 2016). It shows that this sector has the potential to contribute more to economic development if they are intensively

supported (Indrawan, 2019; Tambunan, 2006).

Furthermore, in the digital era, it is essential to assist SMEs sector to improve their business using Information Technology tools. As there are wider opportunities for SMEs to grow their business by adopting IT tools, including e-commerce. The increasing number of urban lifestyle and the enormous number of e-commerce users in ASEAN is an opportunity for Indonesian SMEs to expand their market via e-commerce (Febriantoro, 2018).

Moreover, according to Indonesian Internet Service Providers Association. Survey 2018, in Indonesia, the number of

internet penetration in 2018 is only 64.8% (Indonesian Internet Service Providers Association, 2018). From that number, 2.8% of them find information about products via internet and 0.9% of them buy goods/services via the internet (Indonesian Internet Service Providers Association, 2018). It can be indicated that there is an opportunity for Indonesian SMEs to reach more customers via e-commerce. However, a study by Faudziah, Ahmad and Sentosa (2012) found that only around 0,0013% of MSMEs in Indonesia have used the internet for marketing purposes. Therefore, this study is conducted to seek impact of organizational support and technology competence in e-commerce adoption on the performance of Small and Medium Enterprises in Indonesia, specifically in the Jabodetabek (Jakarta, Bogor, Depok, Tangerang, and Bekasi) region.

### **Objective**

This study was developed with the aim of analyzing the impact of organizational support and technology competence in e-commerce adoption on the performance of SMEs in the Jabodetabek region.

### **Methodology**

A survey was carried out to determine the impact of internal and external factors regarding to the e-commerce adoption to the SMEs performance. The data obtained were analyzed with multiple linear regression analysis to test the hypothesis. The respondents are Small Medium Enterprises which has been trained and educated at the Center for

Trade Education and Training Ministry of Trade.

Respondents in this research are SMEs who have been trained at the Center for Trade Education and Training (CTET). The survey was conducted on June - July 2019. A questionnaire was distributed to a random sample consisting of 40 respondents. The question in the questionnaire are both open and closed type questions, measuring the attitude of the respondents using the Likert scale 1-5 from strongly disagree to strongly agree (Hanum & Sinarasri, 2017).

Respondents of this study are randomly selected from the CTET database. Some information about their characteristics found in this research are gender, company establishment, and business sectors.

Hypotheses for this study are:

1. H1: Organizational support on e-commerce adoption has positive and significant influence to the SMEs' performance in the Jabodetabek region.
2. H2: Technology competence on e-commerce adoption has a positive and significant influence to the the SMEs' performance in the Jabodetabek region.
3. H3: Organizational support and technology competence on e-commerce adoption have simultaneous effect to the the SMEs' performance in the Jabodetabek region.

### **Literature Review**

Electronic commerce defined as a recent concept that describes the process of buying and selling or exchanging of products, services and information via computer networks including internet (Bairagi, 2011). In the same way, Febriantoro (2018) defined e-commerce as the process of information and transaction exchange involving products by using Information Technology tools. In the same way, Ahmad, Bakar, Faziharudean, and Zaki (2015) define e-commerce as part of e-business including buying, selling, transporting, or trading data, goods, or services by using the Internet and intranets. In line with that, Nanehkaran (2013) mentioned that e-commerce involves three main components, which are: communication systems, data management systems and security.

E-commerce has been adopted by many business sectors, including SMEs. Adopting e-commerce has a positive effect on the performance of SMEs (Hendrawan, Sucahyowati, & Cahyandi, 2018). Improving the productivity and efficiency of the company is one benefit gained by SMEs from adopting e-commerce (Cazabat, Paraschiv, Călin, & Popovici, 2019).

A number of studies in academic fields has identified factors affecting SMEs in adopting e-commerce. Research by Ahmad, Bakar, Faziharudean, and Zaki (2015) found that perceived benefits, compatibility, expertise of the owners, characteristics of management, and external change agents are influential factors of Malaysian SMEs in adopting e-commerce. In the other side, Oliveira &

Martins (2010) found that factors influencing e-commerce adoption by SMEs are perceived advantages and challenges of e-business, readiness of technology, competitive pressure, and collaboration with trading partner. In the same way, Rabie (2013) found that characteristics of decision makers, characteristics of organizations, types of innovation, e-readiness of individual and the organizations, support from government and the challenges in adopting e-commerce are several important factors affecting SMES to adopt e-commerce. From those studies, it is found that factors affecting SMEs in adopting e-commerce can be from internal and external factors. Technological competence and organizational support are two essential internal factors of SMEs in adopting SMEs. Therefore, this research attempts to find out the impact of these two factors to the e-commerce adoption by SMEs.

**Results and Discussion**

**A. Respondents Characteristics**

An online survey was conducted and among the sample respondents, result was obtained from 31 respondents.

Data for further analysis consisted of 28 respondents due to 3 respondents are omitted because they haven't adopted e-commerce.

Table 1. Respondents gender

Gender	Number	Percentage
Male	9	29.03
Female	22	70.97
Total	31	100

Source: primary data, analyzed

Table 1 shows that respondents are mostly female-owned enterprises. Female respondents are dominating the survey's result. The composition of the sample's gender is 70.97% female and 29.03% male.

Table 3. The company establishment

Company establishment	Number	Percentage
0-5 years	26	83.87
5-10 years	1	3.23
Above 10 years	4	12.90
Total	31	100

Source: primary data, analyzed

Results obtained from the sample respondents shows that most of the SMEs surveyed have been established between 0-5 years. Some of the enterprises were built more than 10 years. Business establishment, combined with other data is essential to determine whether they are able to survive in this disruption economy period rather than doing their business in traditional ways.

Table 4. Adoption of e-commerce

Business sector	Number	Percentage
Yes	28	90.32
No	3	9.68
Total	31	100

Source: primary data, analyzed

Out of 31 respondents, 28 SMEs owners have used e-commerce as their business practice. It can be indicated that e-commerce has been a common business practice in Jabodetabek region

Table 5. Business Sector

Business sector	Number	Percentage
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Fashion	3	9.70
Culinary	12	38.70
General trading	4	12.90
Others	12	38.70
Total	31	100

Source: primary data, analyzed

Table 5 shows that most of the respondents are in the other business sector such as handicraft, traditional herbal food and drink and business services.

### B. Factors affecting e-commerce adoption and their impact on SMEs performance

According to Hanum and Sinarasri (2017), there are several factors influencing e-commerce adoption by SMEs, i.e.: technology, organizational, environment, and external factors. In this study, we will make a model for the impact of factors affecting e-commerce adoption to SMEs performance.

The statistical model for this research was constructed based on Hanum and Sinarasri (2017) as follows:

$$Y = a + b_1OS + b_2TC + e$$

Where:

- Y = Performance of the SMEs
- OS = Organizational support in e-commerce adoption
- TC = Technological competency in e-commerce adoption
- a = intercept
- b<sub>1</sub>, b<sub>2</sub> = regression coefficient
- e = error

The constructed model then analyzed using a multiple regression analysis and the result described in Table 5 and 6.

Table 6. Regression Statistics

Multiple R	0.78233077
R Square	0.61204143
Adjusted R Square	0.58100475
Standard Error	1.54213684
Observations	28

Source: primary data, analyzed

Analysis of the data with a multiple regression analysis shows that the value of R<sup>2</sup> is 0.6120. This can be interpreted that 61.20% of the relation of the

dependent variable (Y) which is SMEs' performance can be explained by the independent variables (organizational support in e-commerce adoption and technological competency in e-commerce adoption).

Each hypothesis was tested with the F and t-test. F- test conducted to see the overall significance of the research model (Siegel, 2012). Table 6 shows the result of F-test and t-test using Analysis of Variance (ANOVA)

Table 7. Analysis of Variance (ANOVA)

	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	93.79535	46.89767	19.71994	7.24E-06
Residual	25	59.45465	2.378186		
Total	27	153.25			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	1.0174	1.8552	0.5484	0.5882	-2.8034	4.8382	-2.8034	4.8382
OS	0.7660	0.2348	3.2624	0.0032	0.2824	1.2497	0.2824	1.2497
TC	0.1019	0.1730	0.5894	0.5609	-0.2543	0.4582	-0.2543	0.4582

Source : primary data, analyzed

Based on the analysis result, the regression equation was formulated as follows:

$$Y = 1.0174 + 0.7660 OS + 0.1019 TC + e$$

Where:

- Y = Performance of the SMEs
- OS = Organizational support in e-commerce adoption
- TC = Technological competency in e-commerce adoption
- a = intercept
- b1, b2 = regression coefficient
- e = error

In testing hypothesis connected to the relationship between factors affecting e-commerce adoption and the impact on SME performance, from the F-test it was discovered that there is a significant and relationship between all the independent variables together with the dependent variable (Fvalue >Ftable). Therefore, it can be concluded that the two factors affecting e-commerce adoption simultaneously have significant impact to the level of performance of Small and Medium Enterprises in Jabodetabek region (Siegel, 2012).

Direct relationship between all independent variables and Small and Medium Enterprises' performance was indicated by positive and statistically significant of regression coefficients (Siegel, 2012). Specifically, from the data analysis, it is showed that coefficients of regression for organizational support factors are positive and significant. Therefore, we can also conclude that the level of e-commerce adoption was positively affected by organizational factor variables.

Thornton and Marche (2003) recommend that elements in Management Industry Experience; Planning / Strategy; Capital; Record of Financial Control; Expansion of Growth; Inventory Management/ Channels; Advertising/Marketing Strategy; Market Position; Target Market; Customer Service/Experience are critical factors in adopting e-commerce within organization. Therefore, it can be understood that SMEs could improve their performance significantly by adopting e-commerce with sufficient organizational support. A factor of technology competence is defined as second variable in the model. Surprisingly, from the t-test in the Analysis of Variance, this factor showed a positive sign but not significant to give influence in SME's performance. In this case, it indicates that technology competence related with commerce literacy does not have enough impact as a single factor to determine SME's performance in e-commerce adoption in this research. It is suspected because of SME's actors, as the object of this

research, were located in the Jabodetabek region. Therefore, they are considered as literated people compared with the other people located outside Jabodetabek region (Indonesian Internet Service Providers Association, 2019). Therefore, lack of technological competence were no longer an issue in this region. This theses surely will need more further extensive research and data analysis.

### **Conclusion**

According to the regression coefficient significant test, this research reveals that some of the hypotheses are accepted and others are rejected. The final results of the analysis are below:

1. Organizational support on e-commerce adoption has positive and significant influence to the SMEs' performance in the Jabodetabek region.
2. Technology competence on e-commerce adoption has positive but no significant influence to the SMEs' performance in the Jabodetabek region.
3. Organizational support and technology competence on e-commerce adoption have simultaneously affecting to the the SMEs' performance in the Jabodetabek region.

### **Recommendations**

Regarding the results of this study, the authors would recommend:

1. For future research, it is strongly recommended to define more

specifically to the type of e-commerce adopted by SMEs.

2. It is suggested that, government institution handling SMEs will be able to assist SMEs in adopting e-commerce by conducting programs, such as socialization, trainings and workshops to give more support for the organization in adopting e-commerce.
3. It is also strongly recommended that SMEs that already have used e-commerce can be more active in participating in the e-commerce implementation programs held by the government to maintain the organizational support.
4. It is recommended to conduct further research concerning the information technology literacy among the SMEs and its impact on e-commerce adoption.

## References

- Ahmad, S. Z., Bakar, A. R. A., Faziharudean, T. M., & Zaki, K. A. M. (2015). An empirical study of factors affecting e-commerce adoption among small-and medium-sized enterprises in a developing country: Evidence from Malaysia. *Information Technology for Development*, 21(4), 555–572. <https://doi.org/10.1080/02681102.2014.899961>
- Bairagi, A. K. (2011). Utilization of e-commerce can change the auction culture of Bangladesh specially in public sector, 02(01).
- Cazabat, G., Paraschiv, D. M., Călin, A. C., & Popovici, O. C. (2019). A contemporaneous statistical note on e-commerce adoption in Romania - based SMEs. *Amfiteatru Economic*, 21(50), 129–129. <https://doi.org/10.24818/EA/2019/50/177>
- Faudziah, I. A., Ahmad, F., & Sentosa, I. (2012). An empirical study of e-commerce implementation among SME in Indonesia. *International Journal of Independent Research and Studies*, 1(1), 13–22.
- Febriantoro, W. (2018). Kajian dan strategi pendukung perkembangan e-commerce bagi UMKM di Indonesia. *Jurnal Manajerial*, 17(2), 184. <https://doi.org/10.17509/manajerial.v17i2.10441>
- Hanum, A. N., & Sinarasri, A. (2017). Analisis faktor-faktor yang mempengaruhi adopsi e commerce dan pengaruhnya terhadap kinerja UMKM (studi kasus UMKM di wilayah kota Semarang). *Maksimum*, 1(1).
- Hendrawan, A., Sucahyowati, H., & Cahyandi, K. (2018). E-commerce in small and medium enterprises (SMEs) in order to improve performance. *Jurnal Terapan Manajemen Dan Bisnis*, 4(2), 208–215.
- Indonesian Internet Service Providers Association. (2018). Hasil survei penetrasi dan perilaku pengguna internet Indonesia 2018. Retrieved November 15, 2019, from <https://apjii.or.id/survei>
- Indonesian Internet Service Providers Association. (2019). Laporan survei nasional penetrasi pengguna internet 2018. Retrieved from <https://apjii.or.id/survei>
- Indrawan, R. (2019). Sinergitas pengembangan KUMKM melalui penguatan peran antar lembaga.

Retrieved November 15, 2019, from [http://www.depkop.go.id/uploads/laporan/1566564351\\_Bahan Paparan SESMENEGKOP Sinergitas Pengembangan KUMKM melalui Penguatan Peran Antar Lembaga.pdf](http://www.depkop.go.id/uploads/laporan/1566564351_Bahan_Paparan_SESMENEGKOP_Sinergitas_Pengembangan_KUMKM_melalui_Penguatan_Peran_Antar_Lembaga.pdf)

Nanehkaran, Y. A. (2013). Introduction to electronic commerce. *International Journal of Scientific & Technology Research*, 2(4), 190–193. [https://doi.org/10.1007/978-1-4471-3018-5\\_6](https://doi.org/10.1007/978-1-4471-3018-5_6)

Oliveira, T., & Martins, M. F. (2010). Understanding e-business adoption across industries in European countries. *Industrial Management and Data Systems*, 110(9), 1337–1354. <https://doi.org/10.1108/02635571011087428>

Rabie, M. (2013). *The adoption of e-commerce in SMEs: an empirical investigation in Egypt*. University of Stirling.

Siegel, A. F. (2012). *Practical business statistics*. New York: Academic Press.

Statistics Indonesia. (2016). Hasil pendataan usaha/perusahaan sensus ekonomi 2016 lanjutan.

Tambunan, T. (2006). Development of small and medium scale industry clusters in Indonesia. Retrieved September 4, 2019, from [http://www.kadin-indonesia.or.id/id/doc/opini/Development\\_Of\\_Small-&Medium-Scale\\_Industry\\_Clusters\\_In\\_Indonesia.pdf](http://www.kadin-indonesia.or.id/id/doc/opini/Development_Of_Small-&Medium-Scale_Industry_Clusters_In_Indonesia.pdf)

Thornton, J., & Marche, S. (2003). Sorting through the dot bomb rubble: how did the high-profile e-tailers fail?

*International Journal of Information Management*, 23(2), 121–138.

World Bank. (2019). Small and medium enterprises (SMES) finance improving SMEs' access to finance and finding innovative solutions to unlock sources of capital. Retrieved from <https://www.worldbank.org/en/topic/sme/finance>